DETAILED ACTION

Notice to Applicant

1.   The following is an Examiner's Amendment and Reason's for Allowance following

Applicant's amendment of 12/8/09 and communications with Applicant Representative Atty.

Marcia Doubet, Reg. No. 40,999, dated 1/13/09 (*see* attached Interview Summary).

2.   Of claims 1–7, 9–12, 15–19, 21–24 pending as of 12/8/09, claims 1–7, 9–12, 15–19, 21–

24 are allowed as amended below.

3.   Applicant's amendment of 12/8/09, in which Applicant added claims 21–24, and

amended claims 1–5, 15–19, and the title in the specification, has been entered.

Allowable Subject Matter

4.   Claims 1–7, 9–12, 15–19, 21–24 as amended below are allowed over the prior art as

explained further below in the reasons for allowance.

EXAMINER'S AMENDMENT

5.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

        Authorization for this examiner's amendment was given in a telephonic communication

with Marcia Doubet, Reg. No. 40,999, dated 1/13/09.

The application has been amended as follows:

In the Title

Please amend the title of the application as follows:

(Currently Amended) DECISION SUPPORT ACTIVATION AND

MANAGEMENT IN PRODUCT LIFE CYCLES ~~MANAGEMENT~~ USING A

CONTEXT PYRAMID STRUCTURE

In the Claims

Please amend claims 1, 10, 18, and 19 of the application as follows:

1.   (Currently Amended) A computer-implemented method of managing a
collaborative process performed in accordance with a first entity and at least a second entity, the
method comprising:

        a computer obtaining information associated with the collaborative process used to
design and develop a given product; and

        based on at least a portion of the obtained information, the computer dynamically
building and maintaining an information structure as a context pyramid structure to assist at least
one of the first entity and the second entity in managing at least a portion of the collaborative
process;

        wherein the context pyramid structure represents a status of the collaborative process
~~using~~ and comprises a plurality of flow lines that represent a plurality of levels of resolution of
tasks in the collaborative process; and

        wherein the building and maintaining comprises:

                creating a lowest-level flow line to represent a lowest-level of resolution, the
lowest-level flow line corresponding to a timeline for completing the collaborative process, the
timeline containing a plurality of checkpoints for completing the collaborative process, each of
the checkpoints represented on the lowest-level flow line by a node, the nodes comprising at

least a starting node representing a starting checkpoint on the timeline and an ending node representing an ending checkpoint on the timeline; and

        iteratively creating at least one next-higher level flow line to represent a next-higher level of resolution from a next-lower level flow line, for at least one pair of consecutive nodes on the flow line of the next-lower level, the next-higher level flow line corresponding to a next-higher-resolution timeline containing a plurality of higher-resolution checkpoints for completing a portion of the collaborative process that occurs between the checkpoints represented by the consecutive nodes on the lower-level flow line, each of the higher-resolution checkpoints represented on the next-higher level flow line by a node, the nodes on the next-higher level flow line comprising at least a starting node representing a starting checkpoint on the next-higher-resolution timeline and an ending node representing an ending checkpoint on the next-higher-resolution timeline.

        10.   (Currently Amended) The method of claim 1, wherein the information structure is multi-resolutio~~n~~al.

        18.   (Currently Amended) Apparatus for managing a collaborative process performed in accordance with a first entity and at least a second entity, the apparatus comprising:

        a memory; and

        at least one processor coupled to the memory and operative to: obtain information associated with the collaborative process used to design and develop a given product; and based on at least a portion of the obtained information, dynamically build and maintain an information structure as a context pyramid structure to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process, wherein:

        the context pyramid structure represents a status of the collaborative process ~~using~~ and comprises a plurality of flow lines that represent a plurality of levels of resolution of tasks in the collaborative process; and

        the building and maintaining comprises:

creating a lowest-level flow line to represent a lowest-level of resolution, the lowest-level flow line corresponding to a timeline for completing the collaborative process, the timeline containing a plurality of checkpoints for completing the collaborative process, each of the checkpoints represented on the lowest-level flow line by a node, the nodes comprising at least a starting node representing a starting checkpoint on the timeline and an ending node representing an ending checkpoint on the timeline; and

iteratively creating at least one next-higher level flow line to represent a next-higher level of resolution from a next-lower level flow line, for at least one pair of consecutive nodes on the flow line of the next-lower level, the next-higher level flow line corresponding to a next-higher-resolution timeline containing a plurality of higher-resolution checkpoints for completing a portion of the collaborative process that occurs between the checkpoints represented by the consecutive nodes on the lower-level flow line, each of the higher-resolution checkpoints represented on the next-higher level flow line by a node, the nodes on the next-higher level flow line comprising at least a starting node representing a starting checkpoint on the next-higher-resolution timeline and an ending node representing an ending checkpoint on the next-higher-resolution timeline.

19.   (Currently Amended) An article of manufacture for managing a collaborative process performed in accordance with a first entity and at least a second entity, comprising a computer readable storage medium containing one or more programs which when executed <u>by a computer</u> implement:

obtaining information associated with the collaborative process used to design and develop a given product; and

based on at least a portion of the obtained information, dynamically building and maintaining an information structure as a context pyramid structure to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process;

wherein the context pyramid structure represents a status of the collaborative process <u>and comprises</u>~~using~~ a plurality of flow lines that represent a plurality of levels of resolution of tasks in the collaborative process; and

wherein the building and maintaining comprises:

creating a lowest-level flow line to represent a lowest-level of resolution, the lowest-level flow line corresponding to a timeline for completing the collaborative process, the timeline containing a plurality of checkpoints for completing the collaborative process, each of the checkpoints represented on the lowest-level flow line by a node, the nodes comprising at least a starting node representing a starting checkpoint on the timeline and an ending node representing an ending checkpoint on the timeline; and

iteratively creating at least one next-higher level flow line to represent a next-higher level of resolution from a next-lower level flow line, for at least one pair of consecutive nodes on the flow line of the next-lower level, the next-higher level flow line corresponding to a next-higher-resolution timeline containing a plurality of higher-resolution checkpoints for completing a portion of the collaborative process that occurs between the checkpoints represented by the consecutive nodes on the lower-level flow line, each of the higher-resolution checkpoints represented on the next-higher level flow line by a node, the nodes on the next-higher level flow line comprising at least a starting node representing a starting checkpoint on the next-higher-resolution timeline and an ending node representing an ending checkpoint on the next-higher-resolution timeline.

Reasons for Allowance

6.   The following is an examiner's statement of reasons for allowance:

In the art of project management aiding in the development of products, the present

invention is a method, apparatus, and article of manufacture for managing a collaborative

process performed in accordance with a first entity and at least a second entity, comprising:

obtaining information associated with the collaborative process used to design and develop a

given product; based on that information, dynamically building and maintaining a context

pyramid information structure to assist in management of the process; wherein the context

pyramid structure represents a status of the collaborative process and comprises a plurality of

flow lines that represent a plurality of levels of resolution of tasks in the collaborative process;

wherein the building and maintaining comprises: creating multiple flow lines from low

resolution to high resolution, wherein the flow lines correspond to checkpoints for completing

the collaborative process, each flow line having start and end nodes representing starting and

ending checkpoints on a timeline of resolution based on its level.

The closest prior art is as follows:

Matheson U.S. Pat. 7,184,940 teaches a computer-implemented method of managing at least one collaborative process performed in accordance with a first entity and at least a second entity, the method comprising the steps of: a computer obtaining information associated with the at least one collaborative process used to design and develop a product; based on at least a portion of the obtained information, the computer dynamically maintaining an information structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process; wherein the information structure comprises a hierarchical structure; and updating one or more check points associated with the information structure

Microsoft Project 2002 [hereinafter Project 2002], as evidenced by Pyron, *Special Edition Using Microsoft Project 2002*, **Que Publishing, August 5, 2002, pg. 1–47, and Bentsen, et al., U.S. Pub. 2007/0299707** teaches, in the analogous art of collaborative process monitoring and tracking, wherein the context hierarchical structure provides a representation of the status of the collaborative process including one or more global and local tasks including timelines, checkpoints, and a dropdown hierarchy, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process.

Szeliski and Shum, *Motion Estimation with Quadtree Splines***, Digital Equiipment Corporation Cambridge Research Lab, March 1995, pg. 1–36 [hereinafter Szeliski]** teaches a context pyramid information structure in the form of a multi-resolutional pyramid structure comprising three levels of data comprising nodes ranging from coarse to fine in terms of degree of resolution or granularity.

Li et al., Multimedia Content Description in the InfoPyramid, IBM T.J. Watson Research Center, IEEE, 1998, pg. 3789–3792 [hereinafter Li] teaches a multi-dimensional, multi-resolutional data structure called an InfoPyramid which aggregates data with rules, descriptions, and methods for handling the data, describing data in different modalities.

Vimme, U.S. Pub. 2007/0018983 teaches a method of visualizing node-link structures by determining a radius for a circular tree, and incorporates a dropdown hierarchy, and also teaches various traditional hierarchical tree structures with a root node and branches to nodes on different levels.

Weinberg et al., U.S. Pat. 6,144,962 [hereinafter Weinberg] teaches a visual website analysis program that tracks and visualizes web site data, including a plurality of graph structures connecting nodes.

Austin et al., U.S. Pub. 2004/0034662 [hereinafter Austin] teaches a method and apparatus for assisting in the optimization of a hierarchical data structure, such as a process flow

model, including a database for maintaining the hierarchical data, any displaying said data,

which related to tasks, in a relationship based grid data structure view, wherein the tasks have

checkpoints and timelines.

However, neither Matheson, Microsoft Project 2002, at least as evidenced by Pyron and

Bentsen, Szeliski, Li, Vimme, Weinberg, nor Austin singularly or in combination, teach or fairly

suggest, a dynamically built and maintained context pyramid information structure that

represents a status of the collaborative process and comprises a plurality of flow lines that

represent a plurality of levels of resolution of tasks in the collaborative process, *wherein the*

building and maintaining comprises: creating a lowest-level flow line to represent a lowest-level

of resolution, the lowest-level flow line corresponding to a timeline for completing the

collaborative process, the timeline containing a plurality of checkpoints for completing the

collaborative process, each of the checkpoints represented on the lowest-level flow line by a

node, the nodes comprising at least a starting node representing a starting checkpoint on the

timeline and an ending node representing an ending checkpoint on the timeline; and iteratively

creating at least one next-higher level flow line to represent a next-higher level of resolution

from a next-lower level flow line, for at least one pair of consecutive nodes on the flow line of the

next-lower level, the next-higher level flow line corresponding to a next-higher-resolution

timeline containing a plurality of higher-resolution checkpoints for completing a portion of the

collaborative process that occurs between the checkpoints represented by the consecutive nodes

on the lower-level flow line, each of the higher-resolution checkpoints represented on the next-

higher level flow line by a node, the nodes on the next-higher level flow line comprising at least

a starting node representing a starting checkpoint on the next-higher-resolution timeline and an

ending node representing an ending checkpoint on the next-higher-resolution timeline.

Nor does the remaining prior art of record remedy the deficiencies found in Matheson,

Microsoft Project 2002, at least as evidenced by Pyron and Bentsen, Szeliski, Li, Vimme,

Weinberg, and Austin. Furthermore, neither the prior art, the nature of the problem, nor

knowledge of a person having ordinary skill in the art provides for any predictable or reasonable

rationale to combine prior art teachings.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN M. PATS whose telephone number is (571)270-1363. The examiner can normally be reached on Monday through Friday, 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin M Pats/
Examiner, Art Unit 3623

/Beth V. Boswell/
Supervisory Patent Examiner, Art Unit 3623